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## Top priorities

- Clethodim on canola – cease applications once green flower buds become visible
- Dig some holes or monitor the local soil moisture probes to check your confidence level for N applications
- Lentils are approaching canopy closure - have fungicide program ready
- Double check growth stage before spraying herbicides – many stressed crops are much more advanced than they look
- Apply ascochyta fungicides to chickpeas 6-8 weeks post emergence and then monitor weather conditions, reapplying before significant rainfall

## Where are we at this season?

Things are a mixed bag around the stage with some places very wet, other areas very dry and lots in between! Yield potential is often starting to become visible in August – so where are we at this year?

Here is a snapshot of rainfall since April for some key locations, and how that fits relative to median:

Town	April - 14 August rainfall (mm)	Difference to median (mm)
Balaklava	135	-23
Mallala	150	-31
Booloroo	113	-55
Jamestown	163	-34
Minlaton	217	+6
Kadina	118	-49
Freeling	196	-34
Eudunda	141	-60
Cleve	116	-62
Cummins	228	+16
Pinnaroo	100	-37
Loxton	80	-20
Bordertown	265	+51
Naracoorte	298	+48

(Source: CliMate)

Tony Craddock  
 M 0417 809 317  
 E [tcraddock@ruraldirections.com](mailto:tcraddock@ruraldirections.com)

Patrick Redden  
 M 0400 036 568  
 E [predden@ruraldirections.com](mailto:predden@ruraldirections.com)

Brendan Wallis  
 M 0427 017 858  
 E [bwallis@ruraldirections.com](mailto:bwallis@ruraldirections.com)

Richard Saunders  
 M 0488 078 451  
 E [rsaunders@ruraldirections.com](mailto:rsaunders@ruraldirections.com)

Much of the decision making in crops from here on will be based on yield potential. Many areas aren't that much drier than the same stage last year for the growing season. However we know that we entered this year with relatively low stored moisture levels compared to the last few seasons. Hence the reliance on in season rainfall was always going to be higher. We are now approaching the 'money month' of September, looking at rainfall deficits for most areas.

Another factor to consider is crop growth stage. Some cereals that have been stressed have taken off and begun to run to head. They have missed the opportunity to accumulate biomass (which may be a good thing this year), and yield potential will be limited as a result.

Others that didn't get rain to emerge until mid June are only just starting to tiller. In these cases they are likely to be trying to fill grain with a high risk of heat stress, with some yield impacts as a result.

Many paddocks at present are also looking good as you drive past – but upon closer inspection are living from rain to rain. It is these paddocks that can be a bit seductive for yield potential – a spade to dig a hole is always a good idea this time of year, to see what moisture is underneath!

The flipside to the negative yield potential is that there are currently strong grain prices, and for those areas tracking well, there is substantial opportunity this year. Even within farms there are differences between paddocks based on rotation, stubble cover and sowing time. So even if you are in a dry area, don't write things off, you may be missing an opportunity in some paddocks!

The point is to be realistic but balanced when looking at yield potential. Seek a second opinion if you need to. There are also some tools available to help with establishing yield potential, so take some of the guesswork out of it! With average rainfall from now on most areas will still get a crop, although it might be below average.

### Australian CliMate app

CliMate can be used to assess how the season is currently tracking, in comparison to the past 60 years of weather data. It is a quick and simple comparison that can help to put the season into perspective.



### CSIRO potential yield and N calculator

The CSIRO calculator can be used to estimate attainable yield and nitrogen fertiliser requirements.

The calculator is based on the French-Schultz potential yield model, which is then overlaid with deciles, looking at the likelihood of a decile 1-10 finish to the growing season.

Once you have your scenarios setup in the calculator, and a view on the decile rating for the remainder of the season, you can determine a 'fed to' yield. If this is below expected yield potential in the paddock, you can then make the decision to apply more N. alternatively if 'fed to' yield meets yield potential you may decide to keep the urea in the shed.

The CSIRO Potential Yield and N Calculator is currently unavailable online. To get a copy, contact Jeff Baldock ([jeff.baldock@csiro.au](mailto:jeff.baldock@csiro.au)) or speak to your consultant who can point you in the right direction.

There are still some good crops to be found!



## Nitrogen – to spread or not to spread?

Recent rain fronts provided good conditions for spreading nitrogen, but it's not too late if you didn't get the opportunity.

The table below is a quick reminder on how much N is required to produce a tonne of grain. Keep these figures in mind before you cut back nitrogen applications. Even with the dry forecast, a wheat crop will still need 60kg/ha of nitrogen to produce 1.5t/ha of grain.

Crop	N required per tonne of yield
Wheat (11% protein)	40kg/ha
Barley	35kg/ha
Canola	80kg/ha

If you are unsure how much N your crops require, then do a quick budget. Simply work out the N requirement for your anticipated crop, less the N already provided through stored soil N, starter fertiliser and mineralisation. Here is an example of how to do an N budget for a 2.5t/ha wheat crop grown on a paddock with a low nitrogen status (ie. cereal on cereal).

Anticipated wheat yield	2.5t/ha
Total N requirement (kg/ha N)	2.5 x 40 = 100kg/ha N
Soil mineral N prior to sowing (from soil test)	40kg/ha N
N applied at sowing	25kg/ha N (applied as 60kg/ha DAP (18% N) and 30kg/ha of urea (46% N))
Mineralisation	assumed 0kg/ha
Top-dressed N requirement (kg/ha N)	100 - 40 - 25 - 0 = 35kg/ha N (or 76kg/ha urea)

Nitrogen mineralisation is hard to predict and is dependent on soil moisture and organic matter. We assumed there will be minimal mineralisation occurring in spring due to the dry forecast. If you do get high rates of mineralisation in your paddocks, then this can provide a top up for protein.

It is certainly the time of year to:

- Re-assess your nitrogen plans considering updated yield potential, again taking into account soil moisture levels
- Prioritise paddocks with the best yield potential and remind yourself that this is simply about providing enough N for a baseline yield at this stage
  - Cereal on cereals or cereal on canola remain the priority as most started with very low N levels
- Cereal crops on legume stubbles are a lower priority

**N application** - it is difficult in drier years to get nitrogen applied, with limited rainfall opportunities to spread urea prior to a good front. Hence, to keep on top of it, you may need to make use of 1-5mm fronts, rather than the usual (ideal) strategy of only spreading on an 8mm minimum. Rather than going for broke on a single small rainfall front, if possible, spread your risk by doing smaller areas on several fronts.

**Volatilisation** losses from urea during this cool time of year are low. On alkaline soils, potentially no more than 0.5% of the nitrogen applied is lost per day if a decent incorporating rainfall isn't received. Losses are likely to be even less on acidic soil.

Ideally you will need 8mm of rain to dissolve the Urea and move it into the root zone. If you spread some urea, and only received 3mm of rain, what is the likely result? It's not ideal, but over a week you might only lose around 5% of applied N until you receive sufficient rain to 'wash' it in.



## Agronomy in dry times

If you are in one of the drier areas, here are some thoughts on some issues with moisture stress.

### Weed Control

*Eliminate the losses.* Weed control in a dry year is critical. Remove all competition from the crop for water, nutrients and light, but keep it cheap.

*Seed sources for 2019.* It may also be worth scouting for the best performing crops for seed retention in 2018 and keeping them squeaky clean.

*Break crops.* It is also important to keep an eye on the longer-term goal with break crops, despite them being lower yielding in dry years. Even if a canola paddock is struggling, it can still perform an important function by cleaning up grass weeds.

*Moisture stress and weed control.* Getting good results when spraying moisture stressed weeds can be challenging (think of summer spraying!). Weeds develop waxy leaves, slow their growth, and there is more dust and poor Delta T to contend with.

The best efficacy is when plants are sprayed after a rain (not surprising), but if this is not possible or practical then spraying during high humidity can be helpful. It is also important to get the right adjuvant for the product you are using, as this helps to penetrate a waxy leaf. Finally, it is vital to keep water rates up and get spray quality right so that as much active ingredient as possible is deposited on the leaf.

### Feed requirements

The priority for many growers with livestock is feeding them. Many growers have not stopped hand-feeding, and grain and hay supplies are tight for some. In addition, frosts have dramatically slowed growth in paddocks.

Having some contingency plans such as grazing crop paddocks for the next few months will make it easier to adjust as things roll out. If you need to graze crops you will need to consider things like grazing WHP of different chemicals, weed levels, and timing of weed control as these will all have a bearing on the success or otherwise of grazing a cereal if it is needed.

Don't forget that there is a hidden cost to grazing a crop. With grain prices on the move, even relatively low yielding crops can still have some reasonable income. Is this income sacrifice worth it to feed sheep for a short period?

### Soil moisture

Stored soil moisture is paramount in dry seasons. For many, the most significant rain was November 2017, and if you jagged a summer thunderstorm and managed your summer weeds, you may still have reasonable yield potential in a below average rainfall year. Check out a local soil moisture probe or get out your confidence spade and dig some holes and get a feel for how the moisture is going. Monitoring this should be a key driver of management decisions from now.

### Fungicide

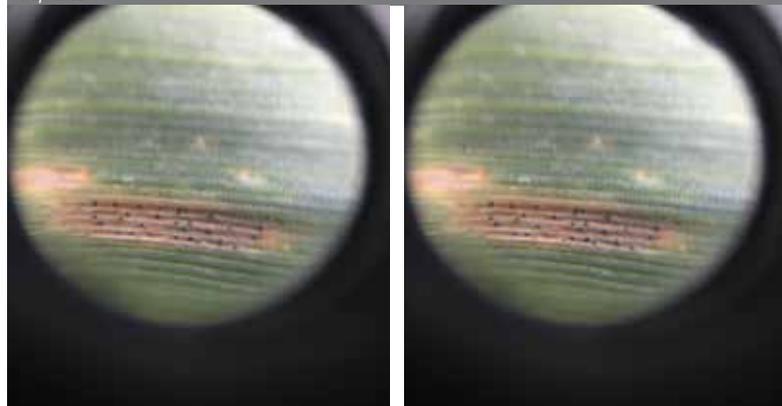
Fungicide may be an area where some savings can be made as most diseases will be lower impact in a dry year, but be strategic. Foliar diseases are not progressing quickly at present in cereals, with low levels of net blotch in barley showing up, but not moving up the canopy without rainfall.

Note that there is some powdery mildew and septoria both present in Trojan and Scepter wheat at the moment. Keep an eye on this – both will need continued moisture to really develop but could be an issue if we get a nice wet August.

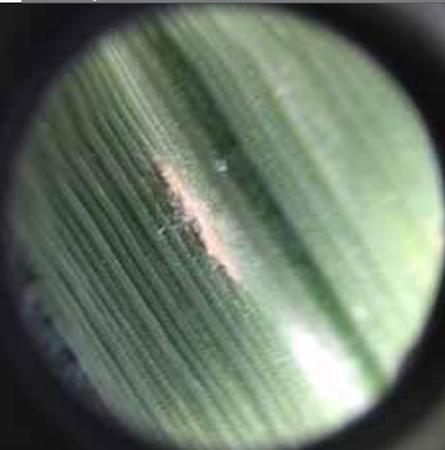
Higher risk crops:

- Chickpeas will still require a careful, regular fungicide program
- Lentils will require as a minimum a pre-canopy closure spray
- Follow-ups can then be determined depending on weather
- Economic responses to fungicide in field peas are usually only in crops where yield potential exceeds 1.75t/ha

Septoria



Powdery mildew



## Ascochyta in chickpeas doesn't go away in a dry year

**Don't drop your guard with ascochyta in chickpeas!** With all chickpea varieties now rated as MS or S to Ascochyta Blight, it is vital that crops are proactively protected with fungicides and then throughout the season. Remember that once ascochyta establishes itself in a crop it is impossible to stop in a favourable year.

Be vigilant and apply protectant fungicides ahead of rainy periods. Watch the weather forecast carefully for the rain fronts.

Things to note:

- Protectant fungicide sprays need to have started at six to eight weeks post emergence. It is important to protect leaves before rainfall events.
- Monitor, monitor, monitor. This is particularly important for chickpea crops sown within 500m downwind of a chickpea stubble.
- Moderately susceptible (MS) varieties will likely require a minimum of three to four strategic in-season fungicides.
- Each spray application offers two to three weeks protection, and only protects the leaves that are emerged (not future leaves). Further applications will be required if rainfall is forecast.
- All chickpea varieties will require protectant fungicide spray/s during pod setting.
- A good fungicide strategy helps provide a clean seed source for following years.

If ascochyta becomes established in chickpeas, you will need systemic fungicide sprays such as Aviator Xpro, (\$32.70/ha) or Veritas (\$31.60/ha) to attempt to control the fungus.



Chickpea ascochyta

Active ingredient	Activity	Example trade names	Rate and \$/ha	
			Ascochyta blight	Botrytis grey mould
Chlorothalonil 720	Protectant	Barrack 720, Unite 720, Barrack Betterstick	1 - 2L \$12.50 – \$25.00	1 - 2L \$12.50 – \$25.00
Mancozeb 750	Protectant	Dithane Rainshield	1 – 2.2kg \$8.90 – \$19.58	1 – 2.2kg \$8.90 – \$19.58
Carbendazim 500	Systemic	Spin Flo	Not effective	500mL \$6.75
Captan 800	Protectant	Captan	2.2kg \$30.25	2.2kg \$30.25
Tebuconazole 200 Epoconazole 12	Systemic	Veritas	750ml-1L \$23.70 – \$31.60	750ml -1L \$23.70 – \$31.60
Prothioconazole 150 Bixafen 75	Systemic	Aviator Xpro	600mL \$32.70	NR

## Update on Eyespot

It is not expected that we will see significant amounts of Eyespot this year. Generally, the 2018 season is later and we have not had sufficient rain around sowing, nor the required rain for spore development after emergence. If the season stays the current course, plant development is likely to be rapid, with a shortened period for stem elongation giving less time for Eyespot disease development.

Spores of the fungus are spread from the residues to seedlings to mainly by raindrop splash. Once spores are spread then development of the disease requires extended leaf wetness. Eyespot is largely only seen in medium to high rainfall cereals.

Eyespot is most likely seen in situations where:

- Cereal rotations are prevalent, currently a two-year break is required
- Susceptible varieties of wheat or barley or durum are currently grown, resistance ratings for most varieties are now listed in Cereal Variety Disease Guide 2018
- Cereals have been sown early
- There has been a pre-sowing or sowing rainfall >15mm
- Where follow up rain falls occur of at least 3mm each day for three consecutive days immediately after emergence

Link to Cereal Disease Guide 2018 for Eyespot ratings: [http://www.pir.sa.gov.au/\\_data/assets/pdf\\_file/0017/311084/Cereal\\_Variety\\_Disease\\_Guide\\_2018\\_booklet\\_WEB.pdf](http://www.pir.sa.gov.au/_data/assets/pdf_file/0017/311084/Cereal_Variety_Disease_Guide_2018_booklet_WEB.pdf)



## Fungicides for Eyespot

Currently only Aviator Xpro is registered for Eyespot, although epoxiconazole and propiconazole have been shown to have some activity. Registration of Soprano (Epoixiconazole) has been applied for and is expected, but not guaranteed, by the end of 2018.

Rates of Aviator Xpro are 300-500mL/ha with grazing WHP of four weeks for wheat and barley. Use the higher rate (up to 500mL/ha) in higher yielding crops where conditions favour disease development or susceptible varieties are grown.